UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF PREVENTION,
PESTICIDES AND
TOXIC SUBSTANCES

June 2, 2009

MEMORANDUM

SUBJECT; Status of Environmental Fate Data Requirements for N-butyl, 1,2-Benzisothiazolin-3-one (B-BIT) New Uses (Construction Materials and Interior/Exterior Wood Coatings and Stains)

To: Marshall Swindell, Risk Manager
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A.I.Chemical Name:	N-Butyl, 1,2-Benzisothiazolin-3-one (B-BIT)
DP Barcode:	D358432, D358437
Registrant:	Arch Corporation
PC Code(s):	098951
Reg. No.	1258-1249
CAS #:	4299-07-4

Executive Summary

Arch Corporation is requesting the addition of construction materials (interior and exterior) to its Vanquish 100 Antimicrobial and Densil DG 45 Fungicide labels. Vanquish and Densil contain 94.5 and 45 % B-BIT, respectively. However, the uses in paints and stains stipulate non-marine exposure. Hydrolysis data (MRID 44364926) were submitted in a previous assessment and satisfy that data requirement. Because of the outdoor uses which can create environmental exposure, additional data will be required as stated below.

B-BIT is hydrolytically stable, water soluble, and not likely to significantly volatilize in environment. However, it will photodegrade and biodegrade based on the chemical structure (See Table 1 and Figure 1 below).

Conclusions

B-BIT (Figure 1) is hydrolytically stable, water soluble, and not likely to significantly volatilize in environment. However, it will photodegrade and biodegrade based on the chemical structure (See Table and Figure 1 below). Further assessment will depend on submission of environmental fate data.

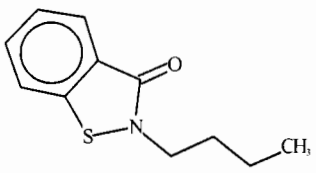

Figure 1. Butyl-Bit (N-Butyl, 1,2-Benzisothiazolin-3-one)

Table 1. Chemical and Physical Properties (from EPI-WEB unless stated)

Property	Value
Melting point	129 °C
Boiling point	353 °C
Molecular weight	207 g/mol
UV/Visible Adsorption	Unstable to exposure in light (Fact Sheet)
Log Kow (Log P)	2.32
Water solubility	418 mg/L
Vapor pressure	9.97×10^{-6} mm Hg
Henry's law	6.50×10^{-9} atm-m3/mole

Tables 2 and 3 below contain the environmental fate data requirements for outdoor uses of antimicrobial products. The required data include photodegradation, soil column leaching and adsorption/desorption, aerobic soil metabolism, and leaching from treated wood surfaces.

Table 2. Environmental Fate Data Requirements for Butyl-BIT

Guideline	Status	Comments/Reference(s)
Hydrolysis (835.2120)	Satisfied	MRID 44364926
Photodegrdation in water (835.2240)	Required	No data submitted
Soil Adsorption-Desorption (835.1230)	Required	No data submitted
Soil column leaching (835.1240)	Required	No data submitted
Aerobic soil metabolism (835.4100)	Required	No data submitted
Aquatic Leaching from wood study (No guideline number)	Required	No data submitted. For guidance refer to **Standard Method of Determining The Leachability of Wood Preservatives,** American Wood-Preservers' Association Standard E11-97.

Table 3. Conditionally-Required (CR) Environmental Fate Data Requirements for Butyl-BIT

[Depending upon the results of the above required environmental fate studies (see Table 2) and any potential environmental exposure/risk concerns, the following environmental fate studies are Conditionally-Required (CR).]

Guideline	Status	Comments/Reference(s)
Accumulation studies in fish (835.1730)	Conditionally-Required (CR)	Pending the results of the above required fate studies and any potential environmental exposure/risk concerns.
Anaerobic soil metabolism (835.4200)	CR	Note: May be waived if acceptable anaerobic aquatic metabolism data are submitted (835.4400)
Anaerobic aquatic metabolism (835.4400)	CR	Pending the results of the above required fate studies and any potential environmental exposure/risk concerns.
Aerobic Aquatic Metabolism (835.4300)	CR	Pending the results of the above required fate studies and any potential environmental exposure/risk concerns.
Accumulation in	CR	Pending the results of the above required

aquatic non-target organisms (835.1950)		fate studies and any potential environmental exposure/risk concerns.
Aquatic field study (840.1100)	CR	Pending the results of the above required fate studies and any potential environmental exposure/risk concerns.

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